

The Paperless Classroom

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Abstract

This paper will discuss the implementation of the paperless classroom in the context of an IELTS class at a university in the United Arab Emirates. The advantages and disadvantages of the paperless classroom will be explored by focusing on different forms of technology covering: smart boards, iPads, overhead projectors and desktop computers. The implementation of the technology will be considered with reference to the technology acceptance model and the SAMR model. Furthermore, teacher and student attitudes toward the technology will be discussed and recommendations for practitioners will be provided.

Keywords: paperless, technology, iPads, IELTS, university

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New technology is constantly making its way into the classroom in an attempt to improve the learning experience (Melhuish, K. & Falloon, G., 2010). Many universities and schools are using computers and mobile devices in the classroom to enhance the academic performance of students. The United Arab Emirates (U.A.E.) is no exception, and in 2012 colleges and universities began to experiment with paperless classrooms in foundations departments. The aim of this paper is to outline my experience of teaching Foundations English in a paperless classroom in the U.A.E., highlighting the perceived drawbacks and advantages and to propose ways in which the paperless classroom experience could be improved.

The Context

The context of this paper is a Foundations English course in a University in the United Arab Emirates. In the U.A.E., students who do not have the prerequisite 6.5 in the IELTS are unable to enter into bachelor programs of study. These students need to take a two year course called the Foundation Year in which they study English for the purpose of passing the IELTS exam. The classes meet for ten hours per week and usually consist of a maximum of twenty students, where the four skills of reading, writing, listening and speaking are taught. The various colleges and universities in the UAE have different approaches to implementing the paperless classroom. In my case, teachers were presented with an iPad and a training course was given. The training covered configuring the Apple store, downloading an App, using the web browser and Keynote, working with Apple Movie Maker and practicing guided access in which the iPad's browser is locked to prevent students moving out of tests to prevent cheating.

A paperless classroom for the purpose of this paper will now be outlined. The classroom consisted of a physical classroom with a desktop computer connected to a projector and screen. The students and teacher used Blackboard 9 as the platform for course delivery. Students and the teacher were provided with wireless capable iPads. Classrooms were equipped with wireless connectivity and internet access. The required textbooks had been scanned in Pdf format; however, they were not in e-book format. Teachers and students were asked to not use paper in the classroom and to use the iPad as an alternative.

Perceived Advantages

The benefits of the paperless classroom were varied and apply to both teachers and students. The first advantage was simply not having any physical paper which can be lost or forgotten and may perish over time. Furthermore, a benefit for the teacher was the absence of having to make photocopies of each handout. Rather than making photocopies, a document could be uploaded to Blackboard and students could access the document using their iPads. A filing system did not need to be developed by students and even disorganized students would find their lecture notes organized for them on Blackboard, week by week. The use of the scanned textbook eliminated the problem of students forgetting their work and there was no need for them to carry heavy textbooks to class.

All textbooks, lecture notes and students' work could be stored on the iPad. By teachers uploading the course content to Blackboard, students found they could access and work on course content wherever and whenever they wished and interact with their teacher by e-mail. Students have different optimal study times depending on their family situation, commute, learning style and personality, therefore the flexibility provided with online accessible content could maximize their efficiency when studying. If a teacher forgets to assign homework, it could be assigned after the class. It allows the teacher more time to reflect on the class and decide what homework would be most appropriate. In addition, students could be reminded of their homework multiple times using the announcement function in Blackboard.

When presenting, the norm is for the teacher to be at the front of the class, so they can write on the board or scroll through Powerpoint slides. By using the iPad's mirroring function, whereby the iPad's screen is projected on the projection screen, the teacher is no longer tied to the desk and can walk around freely while presenting information on the whiteboard. This greater freedom of movement is useful as the teacher can circulate and ascertain that students are on track and thus eliminates a static environment.

The online aspect of the class using Blackboard and iPad access facilitates grade management. Grades are posted in Blackboard with a function called My Grades. The teacher and students can view a running average of the grades throughout the course and therefore anticipate their final grade, before receiving it. With grade negotiation being a large concern among faculty in Gulf universities, having a running average throughout the course duration, means grade negotiation is less prevalent.

Another useful function of Blackboard was the bulletin board discussion board where the teacher could post a discussion question and students were required to respond. This feature helps to ensure students read assigned readings and practice their response to in-class or at home readings, and is a viable alternative to checking homework in class. When students are absent from class, they can go to the lecture notes in Blackboard and read the notes and assignments they have missed. There is no need to make an appointment during the teacher's office hour and/or ask their friends for missed lecture notes. Any lack of concrete answers or misguided information from other students is also prevented.

iPads running the Blackboard app can be used during test time as the guided access feature of the iPad blocks most other functions to prevent students exiting the test and cheating. The tests that run through the Blackboard environment can be automatically graded by Blackboard. The results are sent to the teacher and students as soon as the test is completed. Students appreciate the immediate feedback and teachers are grateful for the extra time.

Students enjoyed working with educational apps on the iPads when the course schedule allowed it, and they used apps to practice spelling and vocabulary-building exercises. Making lessons more fun is one way to lower learners' affective filters and create incentives to learning (Rossiter, 2003) and the games provided an incentive. The game

element made the learning of vocabulary enjoyable and students commented on how they would find studying vocabulary less interesting if it was from a book. Mayo (2009) also found games to be of benefit to learners; results show the learning gap between various learners was diminished by creating gaming systems that can adapt to the pace of the specific user and capitalize on the variation in learning styles (Mayo, 2009).

Perceived Disadvantages

Although there were many benefits encountered with a paperless classroom, there were also drawbacks, some of which would surface unexpectedly and resolving them was not always possible during the class. The first issue encountered was the setting up of student iPads, which took a few hours of class time. Students were given iPads which the teacher needed to register, furthermore students had to register in class for the Apple iTunes store, to be able to download educational apps. It was decided that students were unlikely to be able to set up their own iPads; therefore, the setting up was completed in class. When an educational app was in need of being downloaded, explaining the process and the download often took around fifteen minutes due to forgotten passwords or an inability of the students to find the app in question. The situation was similar for setting up guided access for tests. Setting up guided access is a difficult and time consuming process because the teacher must cycle through several menus and input a password twice without the students seeing the password. Test length was usually forty minutes in a fifty minute class, but setting up guided access for twenty students could sometimes take up to fifteen minutes, due to the students at times being, uncooperative. After the test, the teacher would also have to remove guided access on each iPad which would take up yet more time.

The course textbooks had been scanned and uploaded on students' iPads in Pdf format. They were not true e-books, but scans that functioned as e-books, therefore they were lacking the hyperlinks and ease of use genuine e-books have. Answering questions or gap-fills in the scanned textbooks took students much longer than using a pen and a hard copy book. Students would need to input their answers with the iPad keyboard and then try to position the writing in the correct place by moving it with the touchscreen. This process was expressed awkward and time consuming by many students. The teacher could also answer on their iPad screen and mirror the answers on the overhead projector; however, like the students, teachers found this process time consuming and most wrote the answers on the whiteboard, thus negating the apparent benefits of the iPad.

Other problems relating to the technology itself were the fact that students sometimes forgot to charge their iPads and would come to class with a low battery, which would sometimes run flat in class. If this was the case, the student would not be able to share an iPad due to the difficulty of seeing the screen from an angle when sharing an iPad with another student. Although chargers were available, plugs in the classroom were limited. Although students were at first excited about studying English with an iPad, the initial interest and student engagement with the device was temporary and waned after the first few weeks of the term. During the second half of the term students felt that there was hardly any difference between studying with the iPad or with a book. Students were often

tempted to use social media and play games which made keeping them on task a challenge due to the distractions the iPads presented. A further issue related to not being able to easily view an iPads' screen from an angle meant that it was difficult for teachers to monitor student activity and check if they were on task.

The smart-boards provided in certain classrooms have advantages over usual whiteboards in that they have more functionality and the images could be saved; however, the smart board markers were occasionally broken, had batteries removed by students and the calibration of the marker and board was sometimes incorrect. Other problems relating to the technology was that the wi-fi internet connection occasionally stopped. A recommendation was to always have a back-up of photocopies of the textbook and worksheets, but this would negate the idea of having a paperless classroom and these photocopies would therefore be wasted.

If the wi-fi or servers had connectivity issues during tests or exams, as once was the case, students would file complaints as exams had to be re-taken and on occasion re-written, taking up valuable time and interfering with the course syllabus and timing. On a few occasions power-cuts to the electricity supply would take place and although the iPads were not affected, the desktop and overhead projectors would not function.

Students and teachers may need to get used to the technology Teacher attitudes towards technology can be explained as in the technology acceptance model TAM (Davis 1989, Bagozzi, Davis & Warshaw 1992). Davis et al. note that a number of factors influence student and teachers' decisions about how and when they will use technology. Perceived usefulness which is how the technology will enhance the teachers' job performance and Perceived ease-of-use which is the amount of effort that needs to be put in by the teacher to making use of the new technology (1992) need to be taken in to consideration as variables when implementing a paperless classroom.

Although the Blackboard online course management system had numerous advantages, an issue relating to students no longer listening to teacher instruction became evident. If the teacher did not post homework instructions on Blackboard as announcements, but only gave oral instructions, students would not listen or do the homework. They felt that if it was not written on Blackboard, it was not a genuine request for homework. If the teacher informed students about an up-coming test and the announcement was not shown on Blackboard students would often say that they were unaware of the test, therefore the focus had shifted from the teacher to the technology.

The technology was being substituted for paper without adding a large amount in the form of transformative outcomes due to a lack of teacher training. Most usage of the technology was substitution as in the SAMR mode 1 (Puentedura 2006). The SAMR model explains that substitution is when technology acts as a substitute with no functional change (Puentedura 2006). The budget for all the technology used was very large compared to a traditional classroom and it should therefore be adding more value to the classroom, such as redefinition as explained in the SAMR model. Redefinition is when the technology allows for the creation of new tasks, which were previously

inconceivable (Puentedura 2006). The reason for the lack of redefinition in most cases was the teachers' lack of training and experience with the technology.

Conclusions

After a term of teaching with the iPad as an alternative for paper and pen, it became clear that the iPad is not a viable substitute, although the two could be used in tandem. Blackboard a tried and tested online course delivery system, proved very useful and its advantages greatly outweighed the disadvantages. Furthermore, due to their enhanced functionality, laptops appear to be more useful in the classroom than iPads and it would be preferable to use a laptop computer due to the greater functionality, ease of navigation and practical keyboard. As the difference between laptops and tablets, such as the iPad starts to diminish and the difference between the two devices becomes blurred, the choice of which to use will become less of an issue. During the eighteen weeks of the term a small portion of time was spent on setting up the technology and troubleshooting, rather than on the course content. An on-call technical assistant who would be able to come to the classrooms when needed would be useful. Some of the faculty felt less confident in instruction due to the need to become accustomed to using an iPad and the problems with the technology they would encounter in the classroom. Further research and training needs to be carried out to allow faculty to maximize the benefits of the technology and to not merely use technology as a substitute, but for more transformative outcomes.

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